



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,723	09/20/2005	Remi Jacques	264521US0PCT	8532
22850	7590	04/15/2009		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
ROYSTON, ELIZABETH				
ART UNIT		PAPER NUMBER		
4122				
NOTIFICATION DATE		DELIVERY MODE		
04/15/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com

oblonpat@oblon.com

jgardner@oblon.com

# Office Action Summary

**Application No.**

10/522,723

**Applicant(s)**

JACQUES ET AL.

**Examiner**

Elizabeth S. Royston

**Art Unit**

4122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 14-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/55/08)
- Paper No(s)/Mail Date 1/28/2005
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of claims 1-13 in the reply filed on 3/26/2009 is acknowledged. The traversal is on the ground(s) that the groups are not independent or distinct, the contribution of the special technical feature was not considered in the invention as a whole, and that there is no indication that the claims were interpreted in light of the description. This is not found persuasive for the following reasons:

Applicant is reminded that the requirement for independent and distinct claims is limited to US restriction practice.

With regard to applicant's argument that the office did not consider the contribution of the special technical feature in light of the specification, the examiner provided evidence demonstrating the special technical feature. As set forth in the last office action, Khinkis teaches the special technical feature as claimed, which is common among the inventions.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 14-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7 and 8 recite the limitation "... of a metal other than Si, Na, and B." in line 4. This language renders the scope of the claim unclear and contradictory. The meaning as written implies that there are no metal oxides of Si, Na, or B; however, the earlier composition listing includes compounds of Si, Na, and B. For purposes of examination, the claim was interpreted so that the glass composition included Si, Na, B, and an additional metal oxide.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Kunkle (US PN 4632687).

With regard to claim 1, Kunkle teaches a process for the continuous (col. 6. line 46-47) preparation of a silica composition comprising forming a melt in a furnace (figure 1, item 10) comprising at least two tanks in series (figure 1, item 11 – first and second compartments), said tanks each comprising at least one burner submerged in the melt

(figure 1, item 57 and 58; col. 9, line 28-30), and wherein silica and fluxing agent for the silica are introduced into the first tank (figure 1, item 44; col. 8, line 43-50).

While not explicitly teaching that the fluxing agent is "added", since Kunkle teaches  $\text{Na}_2\text{O}$  as being present in the silica composition of the initial melt, it must have been added, meeting the instant claims.

With regard to claim 2, Kunkle teaches that at least 90% of the silica and at least 90% of the fluxing agent for the silica are introduced into the first tank (figure 1, item 44; col. 8, line 42-50).

With regard to claim 4, Kunkle teaches melting the silica composition in a tank (item 10) at a higher temperature (col. 8, line 68) than the other tank of  $1290^\circ\text{C}$  (col. 11, line 17).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kunkle (US PN 4632687) in view of Brix (US PN 5908703).

The teachings of Kunkle are detailed in the rejection of claims 1, 2, and 4 under 35 USC 102(b) above.

With regard to claim 3, although Kunkle does not explicitly disclose the addition of a thinner to the second tank, Kunkle does disclose the addition of "compositional modifiers that are relatively easily melted" (col. 9, line 25-26) to the second tank (col. 9, line 5 and 23; figure 1, item 11 – all 3 compartments).

Brix teaches that  $B_2O_3$ , disclosed by the applicant as a thinner, facilitates meltability of the glass (col. 3, line 11), thus modifying the composition.

It would have been obvious to one skilled in the art at the time of the invention to introduce  $B_2O_3$  as a compositional modifier to the second tank (figure 1, item 11 – first compartment). The rationale to do so would have been the motivation provided by the teaching of Brix, that to use  $B_2O_3$  to modify the glass composition predictably results in glass with high chemical stability, devitrification stability, and electrical insulating ability (col. 3, line 15-16).

10. Claims 5, 6, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunkle (US PN 4632687) in view of Swain (US PN 2923636).

The teachings of Kunkle are detailed in the rejection of claims 1, 2, and 4 under 35 USC 102(b) above.

With regard to claims 5, 6, and 13 Kunkle discloses a melt temperature of 1260 to 1320°C and a temperature difference of 30°C with the silica melt at a temperature of 1320°C (col. 8, line 68), and a temperature in the other tank of 1290°C (col. 11, line 18), a system that has "great flexibility for making a wide variety of products" (col. 9, line 26-27) due to the modifiable refining stage (col. 9, line 23-25), and the addition of a colorant (col. 9, line 25). Kunkle does not explicitly disclose the temperature of the first melt being 80°C more than temperature in the other tank or that the running temperature for the other tank be at most 1150°C or a frit product.

Swain teaches a process for creating color frit (col. 3, line 16-17) where the initial melting stage can operate at 1260-1426.7°C (col. 3, line 69-71), specifically 1248.9 - 1287.8°C (col. 4, line 2-3), and the latter part of the process operates at 1132.2°C (col. 4, line 5), providing a difference in temperature of more than 80°C.

It would have been obvious to one skilled in the art at the time of the invention to combine the temperatures taught by Swain in the process taught by Kunkle and run the temperature of the other tank 80°C lower than the melt temperature at a temperature below 1150°C, if the desired product was a colored frit. The rationale to do so would have been the motivation provided by the teaching of Swain, that to use the temperatures taught by Swain predictably produces glass with a bright color in a specific dominant wavelength (col. 3, line 10-15).

11. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunkle (US PN 4632687) in view of Ritze (US PN 4106946).

The teachings of Kunkle are detailed in the rejection of claims 1, 2, and 4 under 35 USC 102(b) above.

With regard to claim 10, Kunkle teaches that a colorant is added during the refining stage, starting with the second tank (col. 9, line 23-25; figure 1, item 11 – first tank), although Kunkle does not specifically disclose the addition of a metal oxide to the second tank.

Ritze teaches a metal oxide colorant in glass (col. 2, line 25).

It would have been obvious to one of ordinary skill at the time of the invention to add the metal oxide as taught by Ritze as a colorant to the second tank during the refining stage as taught by Kunkle. The rationale to do so would have been the motivation provided by the teaching of Ritze, that to use the colorants taught by Ritze predictably produces glass with a good homogeneity of color and a minimum of defects (col. 2, line 47-50).

With regard to claim 11, Kunkle teaches a refining stage comprising a second tank operating at 1290°C (col. 11, line 17), a third operating tank at 1370°C (col. 11, line 19), and a fourth tank for cooling (col. 10, line 48-53; col. 11, line 19-21).

Kunkle does not specifically disclose a second tank operating at 1000-1150°C and a third tank operating from 900-1000°C.

Ritze teaches that the temperature range of homogenization for a glass composition meeting all of applicant's recited limitations (col. 2, line 10-23) is from 950



to 1150°C (col. 3, line 3). Further, Ritze teaches a third tank temperature of 980 to 1080°C (col. 3, line 7).

The ranges of 900-1000°C and 1000-1150°C are within normal operating temperatures; further, operational temperatures vary depending on the composition of the melt (col. 2, line 64-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the temperatures disclosed by Ritze in the apparatus taught by Kunkle.

The rationale to do so would have been the motivation provided by the teaching of Ritze, that to use the temperatures taught by Ritze predictably results in the glass with high optical quality (col. 1, line 23-32; col. 2, line 1-2, 47-50).

With regard to claim 12, Kunkle teaches re-oxidation occurs in two sequential tanks (figure 1, chambers 2 and 3), defined as the refining stage (col. 10, line 15-23). While not explicitly teaching that the third tank has a sufficiently oxidizing flame for the oxidation state of the oxide to be raised on going from the second to the third tank, since Kunkle teaches that the re-oxidation occurs in both of the two sequential tanks, the flame in the third tank must have a sufficiently oxidizing flame for the oxidation state of the oxide to be raised on going from the second to the third tank.

12. Claims 7, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunkle in view of Coffeen (US PN 2492523).

The teachings of Kunkle are detailed in the rejection of claims 1, 2, and 4 under 35 USC 102(b) above.

With regard to claims 7 and 8, Kunkle discloses a silica composition comprising 72-74 wt% SiO<sub>2</sub>, 12-15 wt% Na<sub>2</sub>O, and 11-18 wt% of at least one metal oxide other than Si, Na, and B (col. 8, line 43-50), but does not specifically disclose a frit with a composition of 40-70 wt% SiO<sub>2</sub> or 5-15 wt% B<sub>2</sub>O<sub>3</sub>.

Coffeen teaches a frit (col. 1, line 44) composition with 30-50wt% SiO<sub>2</sub> and 3-12 wt% B<sub>2</sub>O<sub>3</sub> (col. 2, line 1-10).

It would have been obvious to one of ordinary skill at the time of the invention to combine the composition taught by Coffeen with the method taught by Kunkle.

The rationale to do so would have been the motivation provided by the teaching of Coffeen, that to use the composition taught by Coffeen predictably results in the increased acid-resistance and workability of the frit (col. 1, line 1-8).

With regard to claim 9, Kunkle discloses the addition of 0.2 wt% of a metal oxide (col. 8, line 48 – iron oxide) from the list including chromium, cobalt, copper, nickel, selenium, zirconium, titanium, manganese, praseodymium, iron, or zinc, but does not specifically disclose the addition of 2-20wt% of metal oxide.

Coffeen teaches the addition of 2-10wt% of a metal oxide (col. 2, line 5 – titanium dioxide) from the list including chromium, cobalt, copper, nickel, selenium, zirconium, titanium, manganese, praseodymium, iron, or zinc. It would have been obvious to one

of ordinary skill at the time of the invention to combine the composition taught by Coffeen with the method taught by Kunkle.

The rationale to do so would have been the motivation provided by the teaching of Coffeen, that to use the composition taught by Coffeen predictably results in the increased acid-resistance and workability of the frit (col. 1, line 1-8).

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth S. Royston whose telephone number is 571-270-7654. The examiner can normally be reached on M-Th 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/522,723  
Art Unit: 4122

Page 11

/ER/  
Patent Examiner, GAU 4122

/Timothy J. Kugel/  
Primary Examiner, Art Unit 1796